



Rephrasing the geodiversity concept under the Ecosystem Services approach and the UN Sustainable Development Goals

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The United Nations 2030 Agenda has 17 Sustainable Development Goals (SDG) aiming to achieve a better world for the entire human population. In spite of the fact that human development is dependent on nature and its resources, the non-living (abiotic) natural resources and processes are persistently neglected in international and national policies that foster sustainable development. The current status of abiotic services within the ecosystem services approach is unsatisfactory, inconsistent and confusing, heavily weighting biotic nature and barely including any non-living elements and processes (geodiversity). Furthermore, nature conservation policies at national and regional levels (e.g. EU), usually excludes geodiversity from any effective conservation action. Based on the successful model of promotion of biodiversity, the role of geodiversity on sustainable development also should be founded on the “natural capital” and “ecosystem services” concepts. Geodiversity contributes to “natural capital”, defined as the “world’s stocks of natural assets, which include geology, soil, air, water and all living things”, sometimes also referred to as environmental assets that provide benefits to humanity. Geodiversity contributes to ecosystem services, based on its scientific, educational, economic, cultural, and aesthetic values. Provisioning services refers to the extractable natural resources, the economic base of our modern society, which should be carefully managed. Non-extractable natural resources provide numerous examples of regulation, supporting and cultural services. These non-extractable resources generate scientific, educational and tourism uses, managed by geoconservation. The geodiversity concept is revised making the links with well-established concepts and strategies, namely the ones related with natural capital and ecosystem services, to demonstrate that the UN SDG can only be achieved if the elements and processes of geodiversity are definitely considered in the global agenda. This approach stresses the importance of the sustainable management of geodiversity. The finite character of non-renewable resources and impacts of their extraction should always be emphasized, as well as the conservation of renewable resources, ensuring their sustainable use.